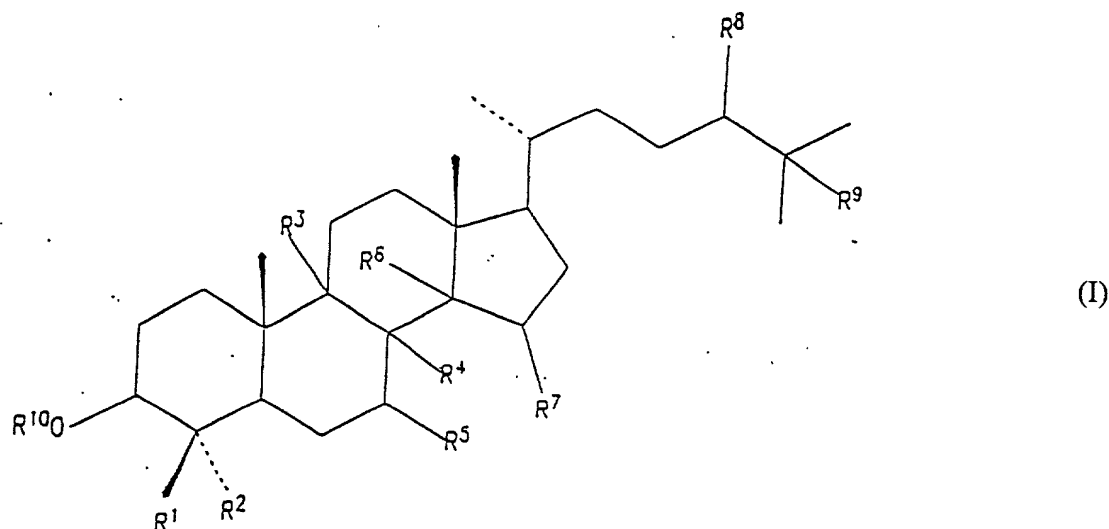


## WHAT IS CLAIMED IS:

1. A method of regulating the meiosis in a mammalian germ cell in vivo, which method comprises administering to a mammal in need thereof a compound of the general formula (I)



wherein

$R^1$  and  $R^2$ , independently, are selected from the group comprising hydrogen, unbranched or branched  $C_1$ - $C_6$  alkyl which may be substituted by halogen or hydroxy or wherein  $R^1$  and  $R^2$  together with the carbon atom to which they are bound form a cyclopentane ring or a cyclohexane ring;

$R^3$  and  $R^4$  together designate an additional bond between the carbon atoms to which they are bound in which case  $R^5$  is hydrogen and  $R^6$  and  $R^7$  are either hydrogen or together they designate an additional bond between the carbon atoms to which they are bound; or

$R^5$  and  $R^4$  together designate an additional bond between the carbon atoms to which they are bound in which case  $R^3$  is hydrogen and  $R^6$  and  $R^7$  are either hydrogen or together they designate an additional bond between the carbon atoms to which they are bound; or

$R^6$  and  $R^4$  together designate an additional bond between the carbon atoms to which

they are bound in which case R<sup>3</sup>, R<sup>5</sup> and R<sup>7</sup> are all hydrogen;

R<sup>8</sup> and R<sup>9</sup> are hydrogen or together they designate an additional bond between the carbon atoms to which they are bound; and

R<sup>10</sup> is either hydrogen or an acyl group, a sulfo group or a phosphono group, or a group  
5 which together with the remaining part of the molecule forms an ether  
in an amount effective to regulate meiosis.

2. The method of claim 1 wherein R<sup>1</sup> is selected from the group consisting of hydrogen, methyl,  
ethyl, unbranched and branched C<sub>3</sub>-C<sub>6</sub> alkyl, unbranched or a branched hydroxy alkyl group  
10 with up to six carbon atoms, unbranched or a branched α-hydroxy alkyl group with up to six  
carbon atoms, unbranched or a branched alkyl group substituted with halogen, and a tri-  
fluoromethyl.

3. The method of claim 1 wherein R<sup>2</sup> is selected from the group consisting of hydrogen, methyl,  
15 ethyl, unbranched and branched C<sub>3</sub>-C<sub>6</sub> alkyl, unbranched or a branched hydroxy alkyl group  
with up to six carbon atoms, unbranched or a branched α-hydroxy alkyl group with up to six  
carbon atoms unbranched or a branched alkyl group substituted with halogen, and a tri-  
fluoromethyl.

20 4. The method of claim 1 wherein R<sup>1</sup> and R<sup>2</sup> together with the carbon atom to which they are  
bound form a cyclopentane ring or a cyclohexane ring.

5. The method of claim 1 wherein R<sup>3</sup> and R<sup>4</sup> together designate an additional bond between the  
carbon atoms to which they are bound and R<sup>5</sup> is hydrogen.

25 6. The method of claim 1 wherein R<sup>5</sup> and R<sup>4</sup> together designate an additional bond between the  
carbon atoms to which they are bound and R<sup>3</sup> is hydrogen.

7. The method of claim 1 wherein R<sup>6</sup> and R<sup>4</sup> together designate an additional bond between the

carbon atoms to which they are bound and R<sup>3</sup>, R<sup>5</sup> and R<sup>7</sup> are hydrogen.

8. The method of claim 1 wherein R<sup>6</sup> and R<sup>7</sup> are hydrogen.

5 9. The method of claim 1 wherein R<sup>6</sup> and R<sup>7</sup> together designate an additional bond between the carbon atoms to which they are bound.

10. The method of claim 1 wherein R<sup>8</sup> and R<sup>9</sup> are hydrogen.

10 11. The method of claim 1 wherein R<sup>8</sup> and R<sup>9</sup> together designate an additional bond between the carbon atoms to which they are bound.

12. The method of claim 1 wherein R<sup>10</sup> is hydrogen.

15 13. The method of claim 1 wherein R<sup>10</sup> is an acyl group derived from an acid having from 1 to 20 carbon atoms.

14. The method of claim 1 wherein R<sup>10</sup> is an acyl group selected from the group comprising acetyl, benzoyl, pivaloyl, butyryl, nicotinoyl, isonicotinoyl, hemi succinoyl, hemi glutaroyl,  
20 butylcarbamoyl, phenylcarbamoyl, butoxy carbonyl, tert-butoxy carbonyl and ethoxy carbonyl.

15. The method of claim 1 wherein R<sup>10</sup> is an alkyl group, an aralkyl group, an alkoxyalkyl group or an alkanoyloxyalkyl group, each group comprising a total of up to 10 carbon atoms, preferably up to 8 carbon atoms, which together with the remaining part of the molecule forms  
25 an ether.

16. The method of claim 1 wherein R<sup>10</sup> is a methoxymethyl group or a pivaloxy methyl group.

17. The method of claim 1 wherein  $R^{10}$  is sulfo.

18. The method of claim 1 wherein  $R^{10}$  is phosphono.

5 19. The method of claim 1 wherein the germ cell is an oocyte or a male germ cell.

20. The method according to claim 1, wherein the compound is 4,4-dimethylzymosterol.

10 21. The method according to claim 1, wherein the compound is 4,4-dimethyl-5 $\alpha$ -cholesta-8,14,24-triene-3 $\beta$ -ol.

22. The method according to claim 1, wherein said mammal is administered between about 1 to about 10 g of said compound per day.